



THIRD SPACE
LEARNING

6th Grade Arkansas State Practice Math Test

Arkansas Practice Test Grade 6

Grade 6

Questions

Name:

Class:

Date:

Score:

SESSION 1:

No Calculator

Standard: 6.EE.A.1

DOK 2

- 1 What is the value of the expression $\frac{2(8-4)+4^2}{6}$

Answer:_____

Standard: 6.NS.B.3

DOK 1

- 2 Find the quotient.
 $7850 \div 25$

Answer:_____

Standard: 6.EE.A.1

DOK 2

3 Select all that are equivalent to 4.2^3

☐ 4.2×3

☐ $4.2 \times 4.2 \times 4.2$

☐ $4.2 \times 2(4.2)$

☐ $4.2^2 \times 4.2$

☐ $4.2 \times 2 \times 4.2^2$

Standard: 6.RP.A.3

DOK 2

4 Complete the ratio table.

7	21		
5		30	40

Standard: 6.EE.B.8

DOK 2

- 5 Write an inequality that represents the number line below.



Answer: _____

SESSION 2:

Calculator

Standard: 6.RP.A.2

DOK 2

- 6 Jay runs 16.5 miles in 2.2 hours. Select his speed in miles per hour.

☐ 7.5 miles per hour

☐ 0.29 mile per hour

☐ 0.3 mile per hour

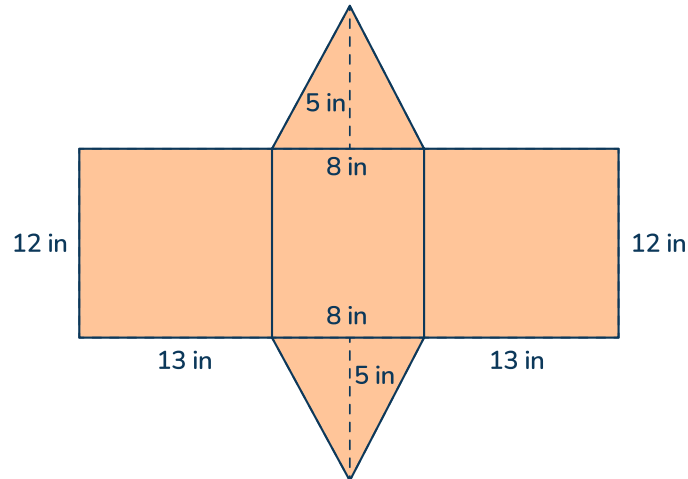
☐ 7 miles per hour

x

Standard: 6.G.A.4

DOK 2

- 7 The net of the triangular prism is below. Find the surface area.



 Answer

Standard: 6.RP.A.1

DOK 2

- 8 The ratio of boys to girls in a 6th grade math class is 2:5. If there are 8 boys, how many girls are there?

Answer:_____

Standard: 6.EE.A.1

DOK 2

- 9 Find the value of the expression $\frac{1}{4}a + c^3$ when $a = 20$ and $c = 2$

 Answer

Standard: 6.RP.A.2

DOK 2

- 10 Devon goes to the store and buys the following:
- 4 pounds of almonds for \$13.12
 - 3 pounds of cashews for \$8.34
 - 5 pounds of chocolate covered pretzels for \$21.40
 - 2 pounds of liquorice for \$5.60


Which food item is the cheapest per pound?

 Answer

Standard: 6.RP.A.3

DOK 2

- 11** 120 students either play field hockey or tennis. If 40% of the students play tennis, how many students play field hockey?

 Answer

Standard: 6.NS.C.7

DOK 2

- 12** Select the answer that has the following in order from least to greatest.
 $|-7|$, $|-9|$, -8 , 0

- ☐ $0, -8, |-7|, |-9|$
- ☐ $-8, 0, |-7|, |-9|$
- ☐ $|-9|, |-7|, 0, -8$
- ☐ $|-9|, -8, |-7|, 0$

Standard: 6.RP.A.1

DOK 2

- 13 There are yellow marbles and green marbles in a bag. The ratio of yellow marbles to green marbles is 2:7. There are 25 more green marbles than yellow marbles. How many yellow marbles are in the bag?

 Answer

Standard: 6.EE.B.8

DOK 2

- 14 Select the values that will make the inequality true.


$$x - 7 > 9$$

- ☐ 16
- ☐ 8
- ☐ 20
- ☐ 9
- ☐ 18
- ☐ 19

Standard: 6.RP.A.3

DOK 3


- 15 Julie keeps a coin collection. She keeps 8 of her oldest coins in a separate box. These 8 coins represent 10% of her collection. What is the total number of coins in Julie's collection?

 Answer

Standard: 6.G.A.1

DOK 2

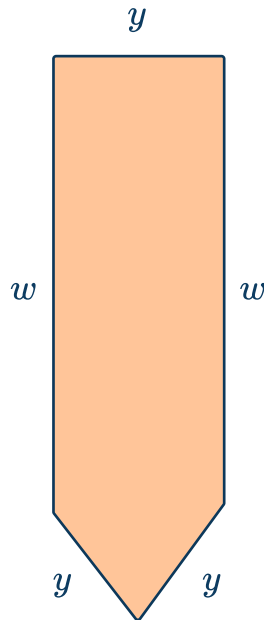
- 16 A rectangular frame has an area of $12 \frac{1}{4}$ inches² and a width of $4 \frac{1}{2}$ inches. Find the length of the frame.

 Answer

Standard: 6.EE.B.6

DOK 2

- 17** Write an expression to represent the perimeter of the irregular figure below.



Answer: _____

Standard: 6.G.A.2

DOK 2

- 18** Find the volume of a cube with side length $2\frac{1}{2}$ cm

Volume = _____

Standard: 6.EE.A.3

DOK 2

19 Select the expressions that are equivalent to $6(7f - 9)$?

☐ $13f - 15$

☐ $13f + 15$

☐ $42f - 54$

☐ $43f + 54$

☐ $-54 + 42f$

☐ $-15 + 3f$

Standard: 6.NS.C.7

DOK 2

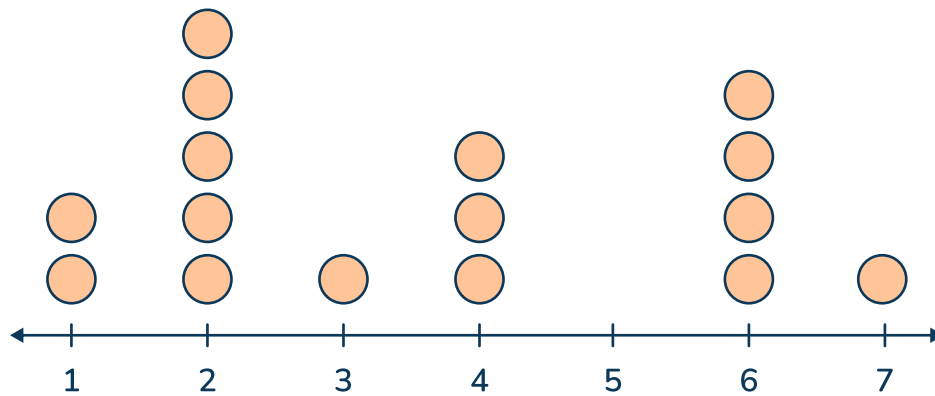
20 Two depths below sea level are recorded below. Write an inequality statement comparing the depths.


-245 ft and -267 ft

Answer:_____

Standard: 6.SP.A.3**DOK 2**

- 21** The dot plot below shows the data of how many cousins 16 students have. Find the absolute value deviation of the data.



 Answer

Standard: 6.RP.A.3
DOK 3

- 22
- The tables below show the amount of time it took Randy and Claudia to pack boxes.
- A. Complete the tables.
- B. If they both maintain this rate, how many boxes will they pack in 35 minutes?
- C. Who has the faster rate?

 Answer

Claudia	
Time (minutes)	Number of boxes
5	4
	8
15	

Rand	
Time (minutes)	Number of boxes
7	6
14	
21	

Standard: 6.EE.B.7

DOK 3

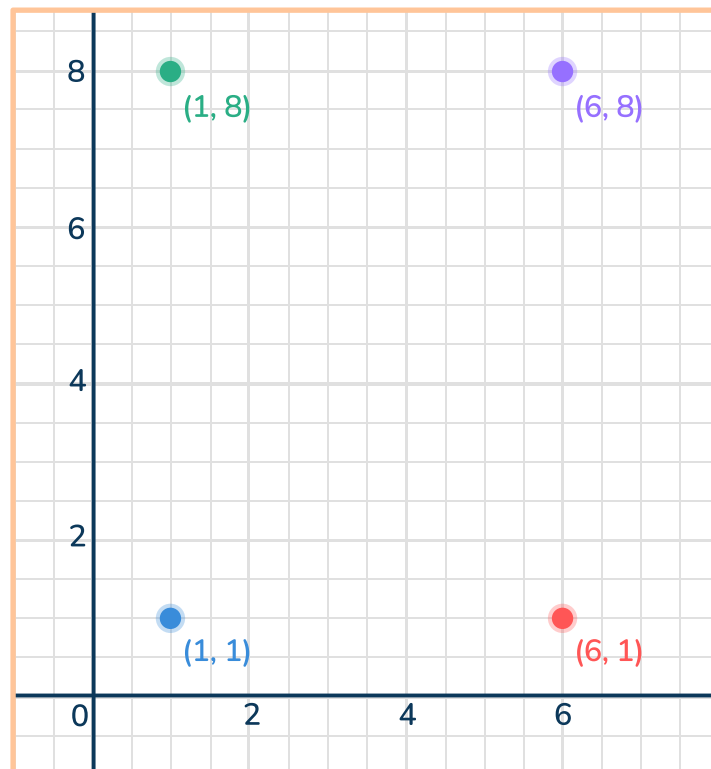
- 23** Jeanie has 16 marbles. This is 4 times as many marbles as Donny has. Write and solve an equation to determine the amount of marbles, m , that Donny has.

 Answer

Standard: 6.NS.C.8

DOK 3

- 24 The graph below represents the coordinates where a farmer puts stakes in the ground to build a fence. What would the perimeter of the fence be?



Rationales

Item	KEY	Rationale
1	4	$\frac{2(8-4)+4^2}{6}$ $\frac{2(4)+4^2}{6}$ $\frac{8+16}{6}$ $\frac{24}{6}$ 4

Item	KEY	Rationale
2	314	$7850 \div 25 = 314$

Item	KEY	Rationale
3	$4.2 \times 4.2 \times 4.2$	$4.2^3 = 4.2 \times 4.2 \times 4.2 = 74.088$
	$4.2^2 \times 4.2$	$4.2^3 = 4.2^2 \times 4.2 = 74.088$

Item	KEY	Rationale
4	<div>7214256</div> <div>5153040</div>	<div>7 → 21, 7 x 6 = 42, 7 x 8 = 56</div> <div>5 → 5 x 3 = 15, 30, 40</div>

Item	KEY	Rationale
5	$x \geq -3$	The arrow is pointing right, indicating all the numbers greater than -3. There is a solid point on -3 indicating that -3 is part of the solution.

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Item	KEY	Rationale
6	7.5	$\frac{16.5}{2.2} = 7.5$ miles per hour

Item	KEY	Rationale
7	448 <i>inches</i> ²	<p>There are two triangular faces that are equal. $2 \times (\frac{1}{2} \times 8 \times 5)$ $2(20)$ 40</p> <p>There are two rectangular faces that are equal. $2 \times (12 \times 13)$ $2(156)$ 312</p> <p>There is one rectangular face that is 8 x 12. 8×12 96</p> <p>Add up all the areas: $40 + 312 + 96 = 448 \text{ inches}^2$</p>

Item	KEY	Rationale
8	20 girls	$\frac{2}{5} = \frac{8}{\text{girls}}$ $40 = 2 \times \text{girls}$ $20 = \text{girls}$

Item	KEY	Rationale
9	13	$\frac{1}{4}a + c^3$ $\frac{1}{4}(20) + (2)^3$ $5 + 8$ 13

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Item	KEY	Rationale
10	The cheapest is cashews at \$2.78 per pound	$\$13.12 \div 4 = \3.28 <i>almonds</i> $\$8.34 \div 3 = \2.78 <i>cashews</i> $\$21.40 \div 5 = \4.28 <i>chocolate covered pretzels</i> $\$5.60 \div 2 = \2.80 <i>liquorice</i>

Item	KEY	Rationale
11	72 students play field hockey	$\frac{x}{120} = \frac{40}{100}$ $100x = 4800$ $x = 48$ play tennis $120 - 48 = 72$ 72 play field hockey

Item	KEY	Rationale
12	-8, 0, -7 , -9	$ -7 =7$ $ -9 =9$ -8, 0, 7, 9 is the correct order from least to greatest.

Item	KEY	Rationale
13	10 yellow marbles	$2:7 = 4:14 = 6:21 = 8:28 = 10:35$ The difference between 2:7 is 5 The difference between 4:14 is 10 The difference between 8:28 is 20 The difference between 10:35 is 25 So, there are 10 yellow marbles.

Item	KEY	Rationale
14	20, 18, 19	$x - 7 > 9$ $x > 16$ The values of x must be greater than 16 so the values that work are 20, 18, and 19

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Item	KEY	Rationale
15	80 coins	10% of 80 is 8 $\frac{10}{100} = \frac{8}{80}$

Item	KEY	Rationale
16	$2\frac{13}{18}$ inches	Area=length x width $12\frac{1}{4} = l \times 4\frac{1}{2}$ $12\frac{1}{4} \div 4\frac{1}{2} = l$ $\frac{49}{4} \div \frac{9}{2} = l$ $\frac{49}{4} \times \frac{2}{9} = l$ $\frac{98}{36} = l$ $\frac{49}{18} = l$ $2\frac{13}{18} \text{ inches} = \text{length}$

Item	KEY	Rationale
17	$Perimeter = 2w + 3y$	$Perimeter = w + w + y + y + y$ $Perimeter = 2w + 3y$

Item	KEY	Rationale
18	$15\frac{5}{8} \text{ cm}^3$	$V = l \times w \times h$ $V = 2\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{2}$ $V = \frac{5}{2} \times \frac{5}{2} \times \frac{5}{2}$ $V = \frac{125}{8} = 15\frac{5}{8} \text{ cm}^3$

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Item	KEY	Rationale
19	$42f - 54$ $-54 + 42f$	$6(7f - 9) = 42f - 54$ which also equals $-54 + 42f$

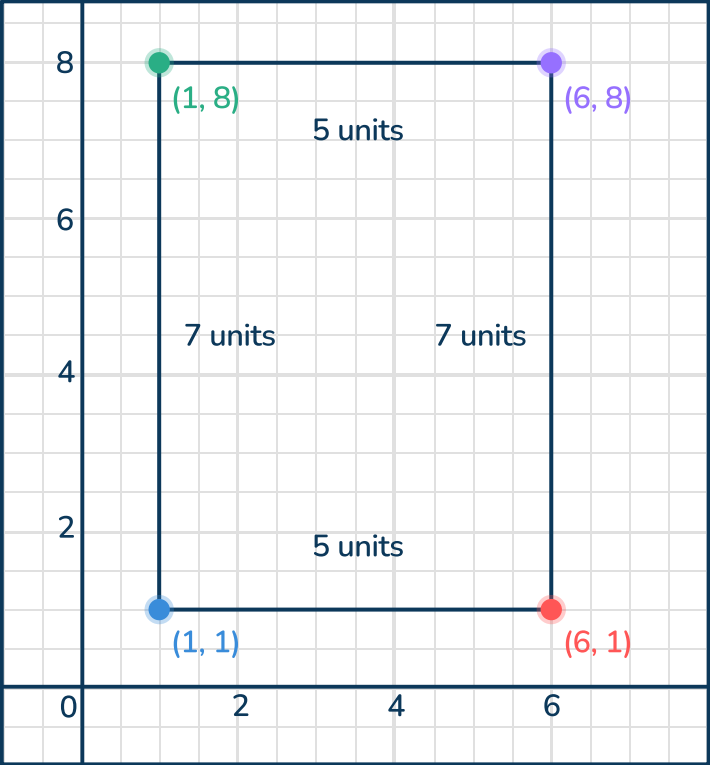
Item	KEY	Rationale
20	$-245 > -267$	-245 is greater than -267 because it is right of -267 on the number line

Item	KEY	Rationale
21	Absolute value deviation = 1.75	<p>Find the mean of the data set which in this case is 3.625</p> <p>Find the difference between each data set and the mean (taking the absolute value of each difference)</p> <p>Find the sum of all of the absolute value differences and divide it by the amount of numbers in the data set which in this case is 16.</p> <p> $1 - 3.625 = 2.625$ $1 - 3.625 = 2.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $2 - 3.625 = 1.625$ $3 - 3.625 = 0.625$ $4 - 3.625 = 0.375$ $4 - 3.625 = 0.375$ $4 - 3.625 = 0.375$ $6 - 3.625 = 2.375$ $6 - 3.625 = 2.375$ $6 - 3.625 = 2.375$ $6 - 3.625 = 2.375$ </p> <p>The sum of the absolute value differences = 28</p> <p>Absolute value deviation = $28 \div 16 = 1.75$</p>

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Item	KEY	Rationale
22	<p>Claudia's table: $5 \rightarrow 4$ $10 \rightarrow 8$ $15 \rightarrow 12$</p> <p>Randy's table: $7 \rightarrow 6$ $14 \rightarrow 12$ $21 \rightarrow 18$</p> <p>Randy in 35 minutes packs 30 boxes.</p> <p>Randy packs faster</p>	<p>Claudia's table: $5 \rightarrow 4$ $5 \times 2 = 10 \rightarrow 8$ $15 \rightarrow 3 \times 4 = 12$</p> <p>Randy's table: $7 \rightarrow 6$ $14 \rightarrow 2 \times 6 = 12$ $21 \rightarrow 6 \times 3 = 18$</p> <p>Claudia = 35 (5 x 7) minutes packs 28 (4 x 7) boxes. Randy = 35 (7 x 5) minutes packs 30 (6 x 5) boxes. Randy packs at a faster rate.</p>

Item	KEY	Rationale
23	<p>$4m = 16$ $m = 4$</p> <p>Donny has 4 marbles</p>	<p>$4m = 16$ $\frac{4m}{4} = \frac{16}{4}$ $m = 4$</p> <p>Donny has 4 marbles.</p>

Item	KEY	Rationale
24	Perimeter = 24 units	<div><p>Perimeter = 7 + 7 + 5 + 5 Perimeter = 24 units</p></div>




Breakdown of Assessment				
Ratios & Proportional Relationships	Expressions, Equations, and Inequalities	The Number System	Geometry	Statistics and Probability
33%	33%	17%	12%	5%

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